

Appl. No. 09/913,871
 Atty. Docket No. 7440
 Amdt. dated September 4, 2003
 Reply to Office Action of June 4, 2003
 Customer No. 27752

AMENDMENTS TO THE CLAIMS

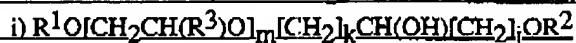
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-13 canceled

14. (presently amended) An automatic dishwashing detergent composition comprising:

- (a) from about 5% to about 90% by weight of the composition of a builder;
- (b) from about 0.1% to about 15%, by weight of the composition of an oxide surfactant, said oxide surfactant being selected from the group consisting of amine oxides, phosphine oxides, sulfoxides, and mixtures thereof;
- (c) from about 0.1% to about 15% by weight of the composition of a low foaming nonionic surfactant wherein said low foaming nonionic surfactant has an interfacial tension of less than 8 dyne/cm having the formula $R^1(EO)_a(PO)_b(BO)_c$ wherein R^1 is a linear or branched C_6 to C_{20} alkyl; a is from about 2 to about 30; b is from 0 to about 30; c is from about 1 to about 10; and having the formula selected from the group consisting of:



wherein R^1 and R^2 are linear or branched, saturated or unsaturated, aliphatic or aromatic hydrocarbon radicals having from 1 to 30 carbon atoms; R^3 is H, or a linear aliphatic hydrocarbon radical having from 1 to 4 carbon atoms; m is an integer having an average value from 1 to 40; wherein when m is 2 or greater, R^3 may be the same or different and k and j are integers having an average value of from 1 to 12; further wherein when m is 15 or greater and R^3 is H and methyl, at least four of R^3 are methyl; further wherein when m is 15 or greater and R^3 includes H and from 1 to 3 methyl groups, then at least one R^3 is ethyl, propyl or butyl; further wherein R^2 can optionally be alkoxylated, wherein said alkoxy is selected from ethoxy, propoxy, butoxy, and mixtures thereof; wherein further, said surfactant has less than 30% of dimers and trimers of said nonionic surfactant;



wherein R^1 is a linear or branched, saturated or unsaturated, aliphatic or aromatic hydrocarbon radicals having from 1 to 30 carbon atoms; R^2 is a linear or branched, saturated or unsaturated, aliphatic or aromatic hydrocarbon

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radicals having from 1 to 30 carbon atoms, optionally containing from 1 to 5 hydroxy groups, and further optionally substituted with an ether group; R³ is H, or a linear aliphatic hydrocarbon radical having from 1 to 4 carbon atoms; e is an integer having an average value from 1 to 40; wherein R² can optionally be alkoxylated, wherein said alkoxy is selected from ethoxy, propoxy, butoxy and mixtures thereof;

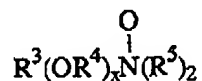
iii) and mixtures of (i) and (ii):

(d) optionally, from about 0.1% to about 40% by weight of the composition of a bleaching agent; and

(e) adjunct materials;

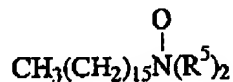
wherein the weight ratio of said low foaming nonionic surfactant to said oxide surfactant is from about 2:1 to about 30:1.

15. (presently amended) The composition according to Claim [[1]] 14 wherein said oxide surfactant is an amine oxide surfactant having the formula:



wherein R³ is an alkyl, hydroxyalkyl, or alkyl phenyl group or mixtures thereof containing from about 8 to about 22 carbon atoms; R⁴ is an alkylene or hydroxyalkylene group containing from about 2 to about 3 carbon atoms or mixtures thereof; x is from 0 to about 3; and each R⁵ is an alkyl or hydroxyalkyl group containing from about 1 to about 3 carbon atoms or a polyethylene oxide group containing from about 1 to about 3 ethylene oxide groups.

16. (presently amended) The composition according to Claim [[1]] 14 wherein said amine oxide has the formula:



wherein R⁵ an alkyl or hydroxyalkyl group containing from about 1 to about 3 carbon atoms or a polyethylene oxide group containing from about 1 to about 3 ethylene oxide groups.

17. canceled

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18. canceled

19. canceled

20. canceled

21. (presently amended) The automatic dishwashing detergent composition according to Claim [[20]] 14 wherein said surfactant has less than 5% of dimers and trimers of said nonionic surfactant.

22. (canceled)

23. (presently amended) The automatic dishwashing detergent composition according to Claim [[22]] 21 wherein said surfactant has less than 15% of dimers and trimers of said nonionic surfactant.

24. (canceled)

25. (canceled)

26. (canceled)

27. (canceled)

28. (previously presented) The composition according to Claim 14 wherein said low foaming nonionic surfactant is selected from the group consisting of C₉,11PO₃EO₁₃PO₁₅; C₉,11PO₃EO₁₃BO₆; C₉,11PO₃EO₁₃BO₃; C₉,11EO₁₃BO₆; C₉,11EO₁₃BO₃; C₉,11BO₁EO₁₃BO₃; C₉,11EO₈BO₃; C₁₂,15EO₇BO₂; C₉,11EO₈BO₂; C₉,11EO₈BO₁; C₁₂,13EO₆.5TBO₁; C₉,11EO₈C(CH₃)₂CH₂CH₃; C₁₁/15EO₁₅PO₆C₁₂/14; C₉,11EO₈(CH₂)₄CH₃; and mixtures thereof.

29. (canceled)

30. (previously presented) The automatic dishwashing detergent composition according to Claim 14 further comprising a co-surfactant selected from the group consisting of low cloud point nonionic surfactants, high cloud point nonionic surfactants, anionic surfactants, and mixtures thereof.

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31. (canceled)

32. (previously presented) The automatic dishwashing detergent composition according to Claim 30 wherein said low cloud point nonionic surfactants have a cloud point of less than about 20°C.

33. (canceled)

34. (previously presented) The automatic dishwashing detergent composition according to Claim 32 wherein said low cloud point nonionic surfactants are selected from the group consisting of ethoxylates derived from primary alcohol, polyoxypropylene/polyoxyethylene/polyoxypropylene reverse block polymers, ethoxylated-propoxylated alcohol, epoxy-capped poly(oxyalkylated) alcohols, and mixtures thereof.

35. (canceled)

36. (previously presented) The automatic dishwashing detergent composition according to Claim 30 wherein said high cloud point nonionic surfactants have a cloud point of greater than about 50°C.

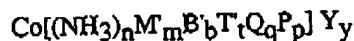
37. (canceled)

38. (previously presented) The automatic dishwashing detergent composition according to Claim 36 wherein said high cloud point nonionic surfactants are selected from the group consisting of straight chain fatty alcohols containing from about 6 to about 20 carbon atoms, branched chain fatty alcohols containing from about 6 to about 20 carbon atoms, secondary fatty alcohols containing from about 6 to about 20 carbon atoms, branched alcohol ethoxylates condensed with an average of from about 6 to about 15 moles of ethylene oxide per mole of alcohol, secondary alcohol ethoxylates condensed with an average of from about 6 to about 15 moles of ethylene oxide per mole of alcohol, and mixtures thereof.

39. (presently amended) The automatic dishwashing detergent composition according to Claim [[1]] 14 wherein the composition comprises a chlorine bleaching agent.

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40. (presently amended) The automatic dishwashing detergent composition according to Claim [[1]] 14 comprising a bleaching agent selected from sodium perborate, sodium percarbonate, and mixtures thereof.
41. (presently amended) The automatic dishwashing detergent composition according to Claim [[1]] 14 comprising a bleaching agent selected from hydrogen peroxide, a source of hydrogen peroxide, and mixtures thereof.
42. (presently amended) The automatic dishwashing detergent composition according to Claim [[1]] 14 comprising said bleaching agent, wherein said bleaching agent is dibenzoyl peroxide.
43. (presently amended) The automatic dishwashing detergent composition according to Claim [[1]] 14 comprising said bleaching agent, wherein said bleaching agent is dichloroisocyanurate.
44. (presently amended) The automatic dishwashing detergent composition according to Claim [[1]] 14 further comprising a bleach activator material selected from the group consisting of tetraacetylenediamine, cationic bleach activators, and mixtures thereof.
45. (presently amended) The automatic dishwashing detergent composition according to Claim [[1]] 14 further comprising a metal-containing bleach catalyst selected from manganese-containing bleach catalysts, cobalt-containing bleach catalysts, and mixtures thereof.
46. (previously presented) The automatic dishwashing detergent composition according to Claim 45 wherein the cobalt-containing bleach catalyst has the formula:



wherein cobalt is in the +3 oxidation state; n is an integer from 0 to 5; M' represents a monodentate ligand; m is an integer from 0 to 5; B' represents a bidentate ligand; b is an integer from 0 to 2; T' represents a tridentate ligand; t is 0 or 1; Q is a tetradentate ligand; q is 0 or 1; P is a pentadentate ligand; p is 0 or 1; and $n + m + 2b + 3t + 4q + 5p = 6$; Y is one or more appropriately selected counteranions present in a number y, wherein y is an integer from 1 to 3, to obtain a charge-balanced salt; and wherein at least one of the coordination sites attached to the cobalt is labile under automatic dishwashing use conditions and the remaining coordination sites stabilize the cobalt under automatic

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dishwashing conditions such that the reduction potential for cobalt (III) to cobalt (II) under alkaline conditions is less than about 0.4 volts versus a normal hydrogen electrode.

47. (previously presented) The automatic dishwashing detergent composition according to Claim 46 wherein the bleach catalyst is selected from the group consisting of pentaamineacetatocobalt (III) nitrate, MnTACN, and mixtures thereof.

48. (presently amended) The automatic dishwashing detergent composition according to Claim ~~[[1]]~~ 14 wherein said builder is a phosphate builder.

49. (presently amended) The automatic dishwashing detergent composition according to Claim ~~[[1]]~~ 14 further comprising less than about 0.1% of active suds suppressing agent.

50. (presently amended) The automatic dishwashing detergent composition according to Claim ~~[[1]]~~ 14 further comprising a detergent enzyme.

51. (previously presented) The automatic dishwashing detergent composition according to Claim 50 wherein said detergent enzyme is selected from the group consisting of proteases, lipases, cellulases, amylases, and mixtures thereof.

52. (canceled)

53. (previously presented) The automatic dishwashing detergent composition according to Claim 14 in the form of granules, tablets, or liquidgels.

54. (canceled)

55. (previously presented) A method of washing tableware in a domestic automatic dishwashing appliance, said method comprising treating the soiled tableware in an automatic dishwasher with an aqueous alkaline bath comprising an automatic dishwashing composition according to Claim 14.